

2017 Update to the Central Valley Flood Protection Plan

January 27, 2017

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2017 ROADMAP



Today's Discussion

- **Central Valley Flood Protection Plan**
 - 2012 CVFPP and 2017 CVFPP Update
 - 2017 CVFPP Update Highlights
- **Legislative Reference and Reader's Guide**

Summary of CVFPP Contents



2012 CVFPP Content

Section 1: Responding to the Need for Improved Flood Management in the Central Valley

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Section 2: Preliminary Approaches

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Section 3: State Systemwide Investment Approach

Section 4: Implementing and Managing the State Systemwide Investment Approach

Section 4.7: Financing Strategy for Implementing the State Systemwide Investment Strategy



2017 CVFPP Update Content

Chapter 1: Updating the Central Valley Flood Protection Plan

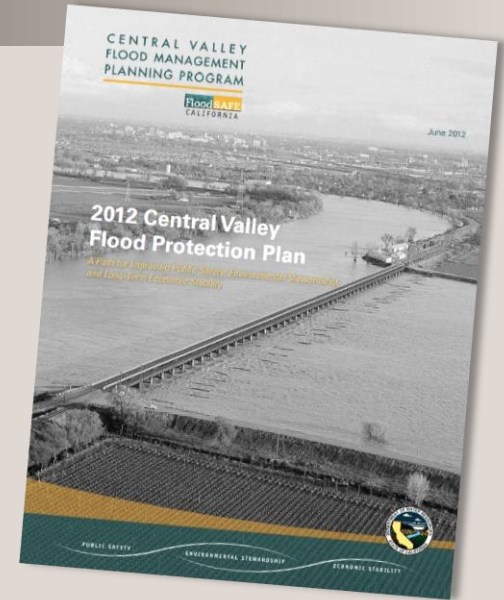
Chapter 2: Refining the State Systemwide Investment Approach

Chapter 3: Strategies to Improve System Management

Chapter 4: Funding and Implementing the 2017 Refined State Systemwide Investment Approach Portfolio

Central Valley Flood Protection Plan (CVFPP)

- Strategic blueprint to improve flood risk management in the Central Valley
- Recommended the State Systemwide Investment Approach (SSIA) to guide activities within State Plan of Flood Control (SPFC) floodplains
- Five-year updates prepared in accordance Central Valley Flood Protection Act of 2008 requirements and California Water Code Sections 9600 through 9625



2017 Update to the CVFPP

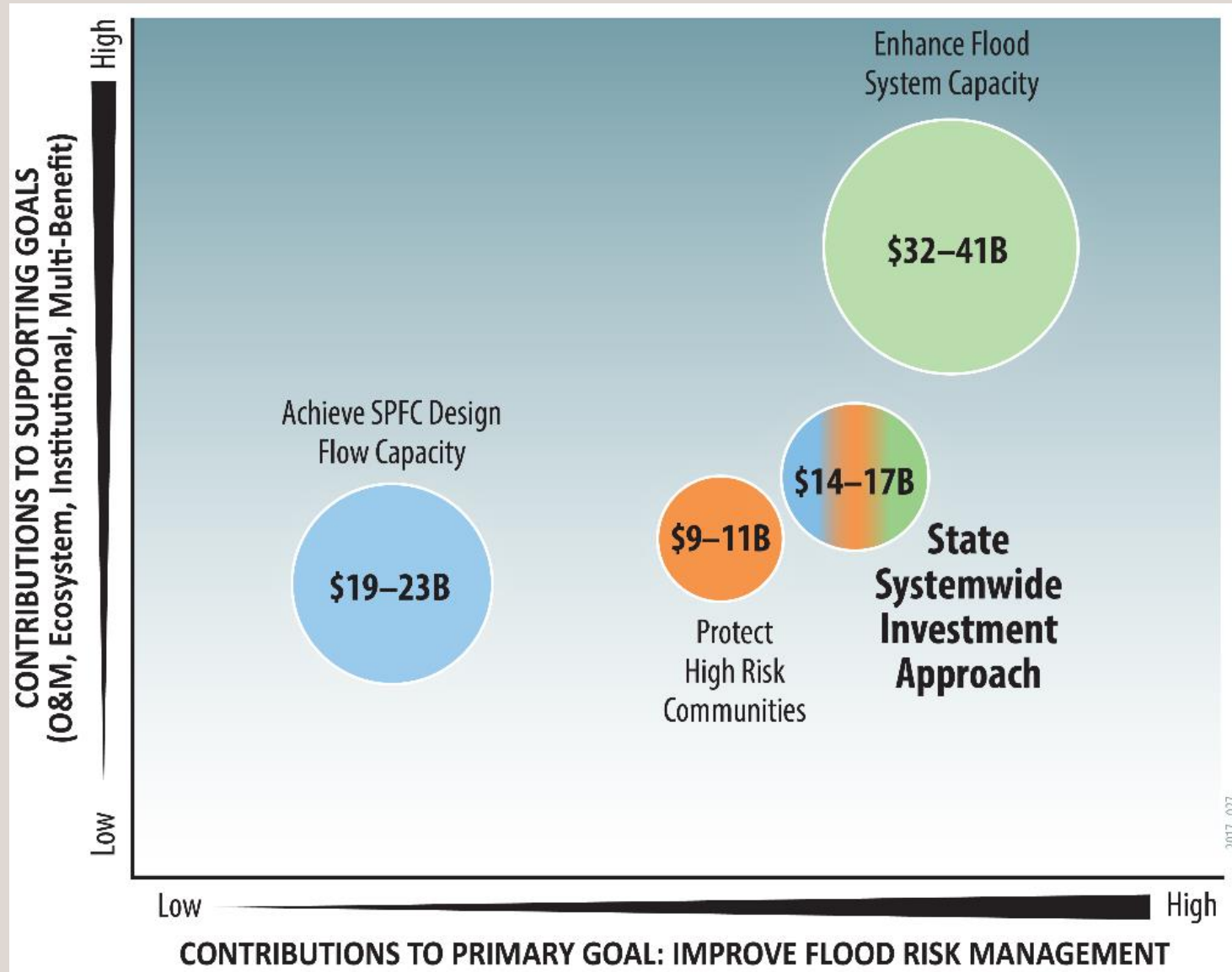
- Continues implementation of key concepts from 2012
- Recommends refinements/changes only where necessary
- Brings together technical and policy-level information to refine SSIA and associated cost estimates, funding, phasing over next 30 years
- Includes recommendations on policies and funding to support comprehensive flood risk management actions



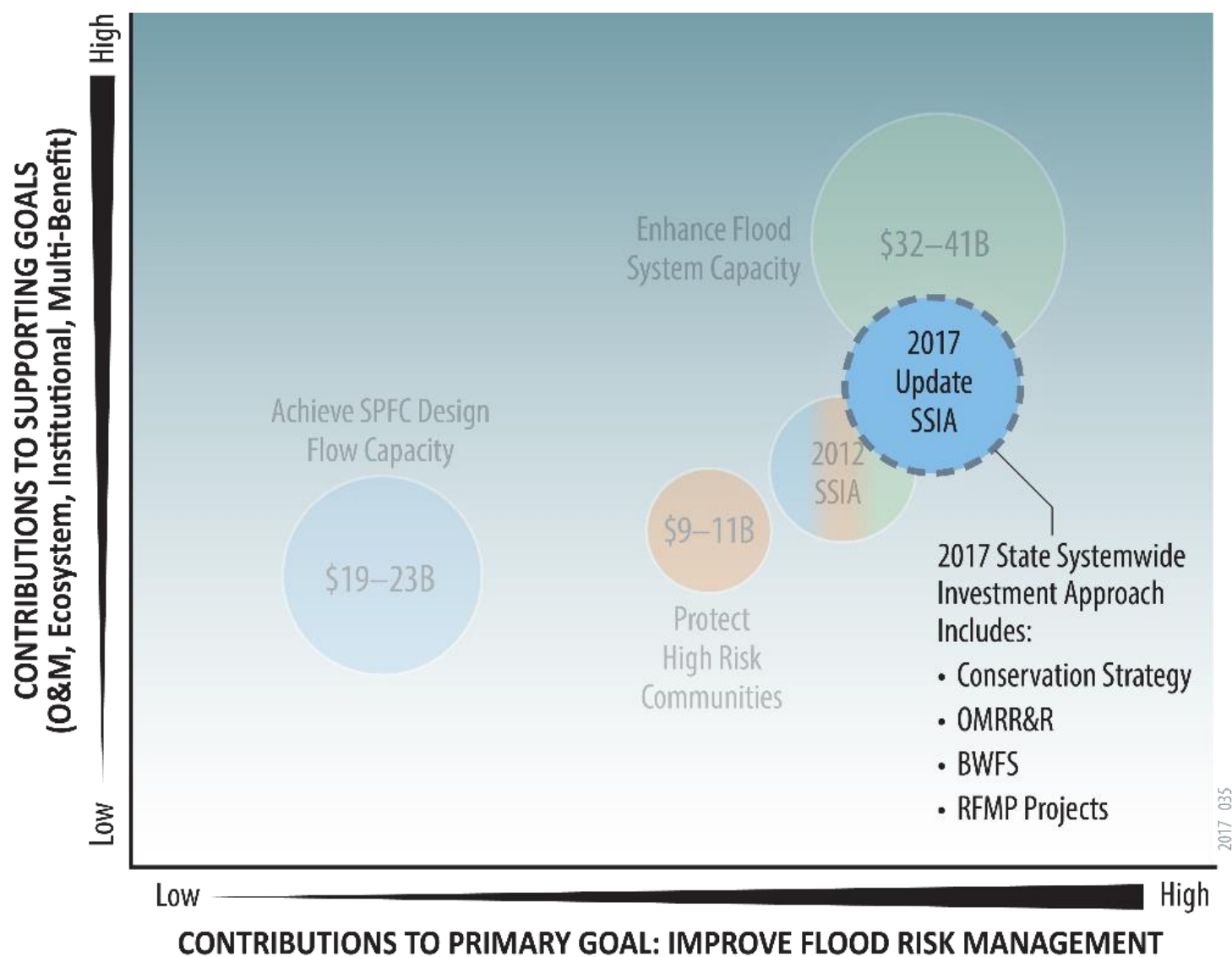
CVFPP Primary and Supporting Goals

Primary: Improve Flood Risk Management	
Reduce the chance of flooding, and damages once flooding occurs, and improve public safety, preparedness, and emergency response	
Supporting	
Improve Operations and Maintenance	Promote Ecosystem Functions
Improve Institutional Support	Promote Multi-Benefit Projects

2012 State Systemwide Investment Approach (SSIA)



2017 Refined SSIA



Chapter 1

Updating the Central Valley Flood Protection Plan

- CVFPP implementation progress to date
- Policy issues since 2012 CVFPP



Programmatic Planning at Different Scales

- **Systemwide or large-scale** – Encompassing multiple regions and/or land use types up to the full extent of the flood management system in the Central Valley
- **Regional-scale or medium-scale** – The general scale of the regions defined through Regional Flood Management Planning according to delineation by hydrologic and administrative boundaries
- **Small-scale** – A local area of limited geographic extent

CVFPP Implementation Progress

Table 1-2. State Investments in Flood Management (2007–2016)

Program	Investment (\$M)
Flood Management Planning	\$375
Floodplain Risk Management	\$170
Flood Risk Reduction Projects	\$1,475
Flood System Operations and Maintenance	\$180
Flood Emergency Response	\$240
Total	\$2,440

Note: Investments include expenditures and allocated funds for the SPFC as of October 2016, and do not include additional non-SPFC investments. Table reflects State investments only (not federal and local contributions).

CVFPP Implementation Progress

- Three flood management improvements added to SPFC
- Repair, rehabilitation, and improvement of about 220 miles of urban SPFC levees, 100 miles of non-urban SPFC levees
- State participation in Folsom Dam Joint Federal Project
- Flood-Coordinated Operations and Forecast-Informed Operations progress
- Improvements to flood emergency preparedness and response
- More comprehensive levee vegetation approach
- Recommendations from Agricultural Floodplain Ordinance Task Force

Flood-Management Policy Issues

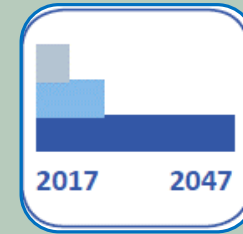
Land Use and Floodplain Management



Residual Risk Management



Hydraulic and Ecosystem Baselines and Program Phasing



Operations and Maintenance of the Flood System



Development of Multi-Benefit Projects



Effective Governance and Institutional Support



Coordination with Federal Agencies



Finance



Chapter 2

Refining the State Systemwide Investment Approach

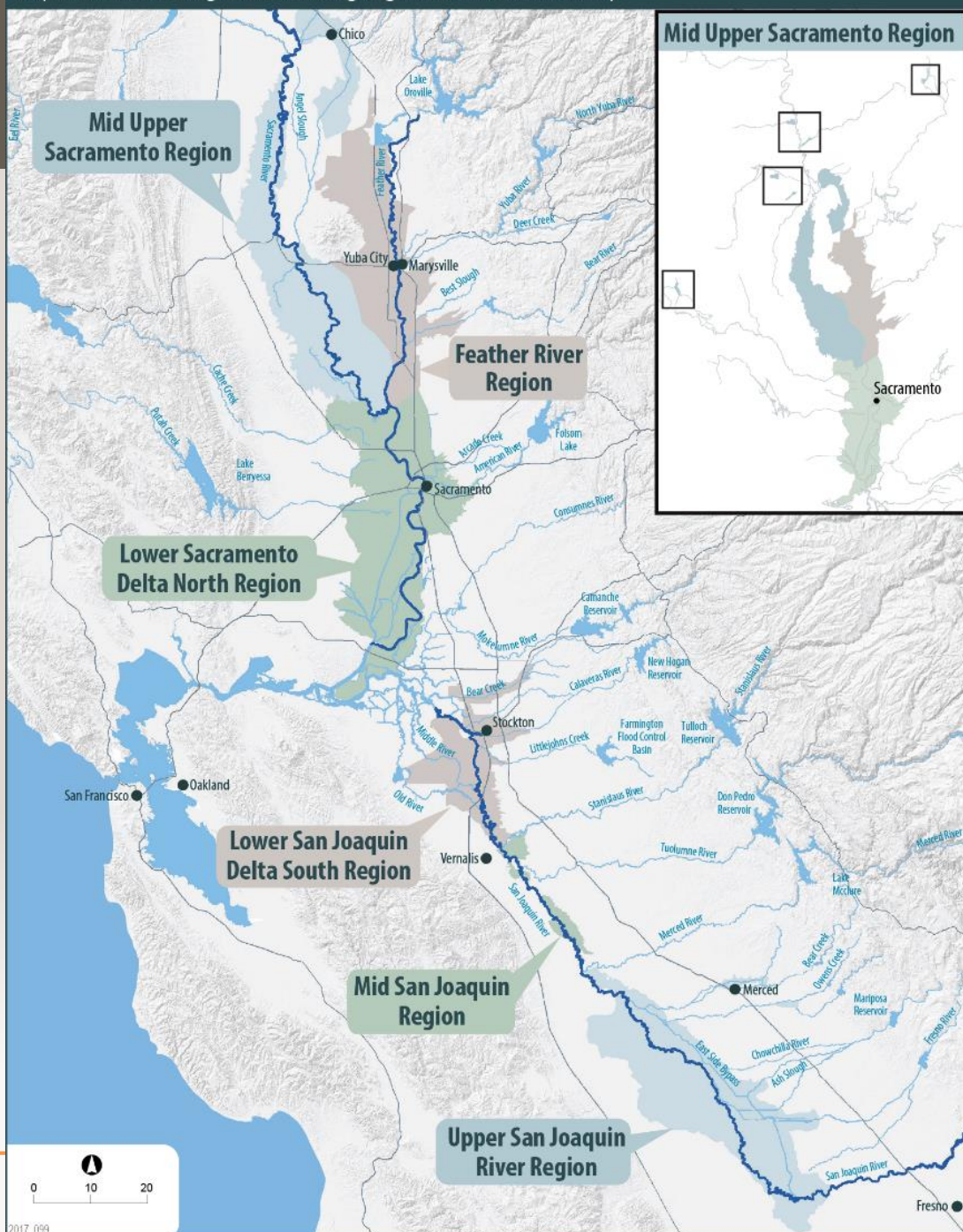
- Planning process overview
- Stakeholder perspectives







Planning with Regional Partners

- Provided cost estimates, timelines and other details to forecast investment need and articulate priorities in specific geographic areas
- Refined and updated actions of different scales

Map 2-1. Flood Management Planning Regions in the Central Valley



Outcomes Guide Success and Accountability

Outcome Categories		Example Tracking Metrics
Public Safety Outcomes		
	Measures of overall improved public safety (resulting from combination of flood-specific outcomes)	Number of lives lost or people injured in large flood events (expected annual life loss)
Ecosystem Vitality Outcomes		
	Measures of overall improved ecosystem vitality (resulting from combination of flood-specific outcomes)	Change in the quantity and quality of natural habitats over time
Economic Stability Outcomes		
	Measures of overall improved economic stability (resulting from combination of flood-specific outcomes)	Total value of annual economic floodplain activity less floodplain management costs less expected annual damage
Enriching Experiences Outcomes		
	Measure of overall improved enriching experiences (resulting from combination of flood-specific outcomes)	Percentage of residents who feel they have ample opportunities for recreation, cultural enrichment, and education

Stakeholder Perspectives on Flood Management Policy Issues

- Stakeholder insights organized around eight flood management policy issues
 - Areas of agreement
 - Areas for continuing conversations

Perspectives on Operations and Maintenance of the Flood System



The Issue: Operations, maintenance, and repair activities are critical for long-term, sustainable flood management. A robust and fully funded O&M program is fundamental to the proper function of the SPFC, ensuring public safety and upholding the State's legal assurances to maintain federal flood project features, and enabling the implementation and maintenance of multi-benefit projects. However, O&M has been impaired by two primary constraints:

- O&M activities have been chronically underfunded
- Declining natural resources have led to a regulatory framework in which flood managers often face conflicting mandates.

Areas of Agreement

- ✓ Aging infrastructure and decades of deferred maintenance compromise the performance of existing facilities. Further, many facilities predate (and therefore do not meet) modern design standards.
- ✓ Significant additional funding is needed to properly maintain SPFC facilities.
- ✓ An improved approach to permitting flood system maintenance is needed.
- ✓ A prioritized list of maintenance requirements that support habitat stewardship with a funding and regulatory path forward is needed.
- ✓ The flood management system should be managed as a dynamic whole that will evolve over time, and should include considerations for infrastructure and habitat while maintaining access to reliable water supplies and sustainable local economies to support broad public values.

Areas for Continuing Conversations

- ? Channel capacity may be increased through dredging and vegetation removal, but this does not address systemwide geomorphic and ecosystem health trends.
- ? Incorporating maintenance of habitat improvements into flood maintenance requirements could introduce further financial and regulatory burden on maintaining agencies.
- ? Regional programmatic environmental permitting or multiple-objective O&M approaches could result in improved flood system resiliency as well as ecosystem improvement. Ecosystem uplift could reduce regulatory burden for flood system maintenance over time.

EXAMPLE

Stakeholder Perspectives on Operations and Maintenance of the Flood System- Example

- **Areas of Agreement** – Aging infrastructure and decades of deferred maintenance compromise the performance of existing facilities. Further, many facilities predate (and therefore do not meet) modern design standards.
- **Areas for Continuing Conversations** – Channel capacity may be increased through dredging and vegetation removal, but this does not address systemwide geomorphic and ecosystem health trends.

Chapter 3

Strategies to Improve System Management

- SSIA refinements
- Management actions at systemwide, urban, rural and small community levels
- Policy and financial conditions for effective implementation



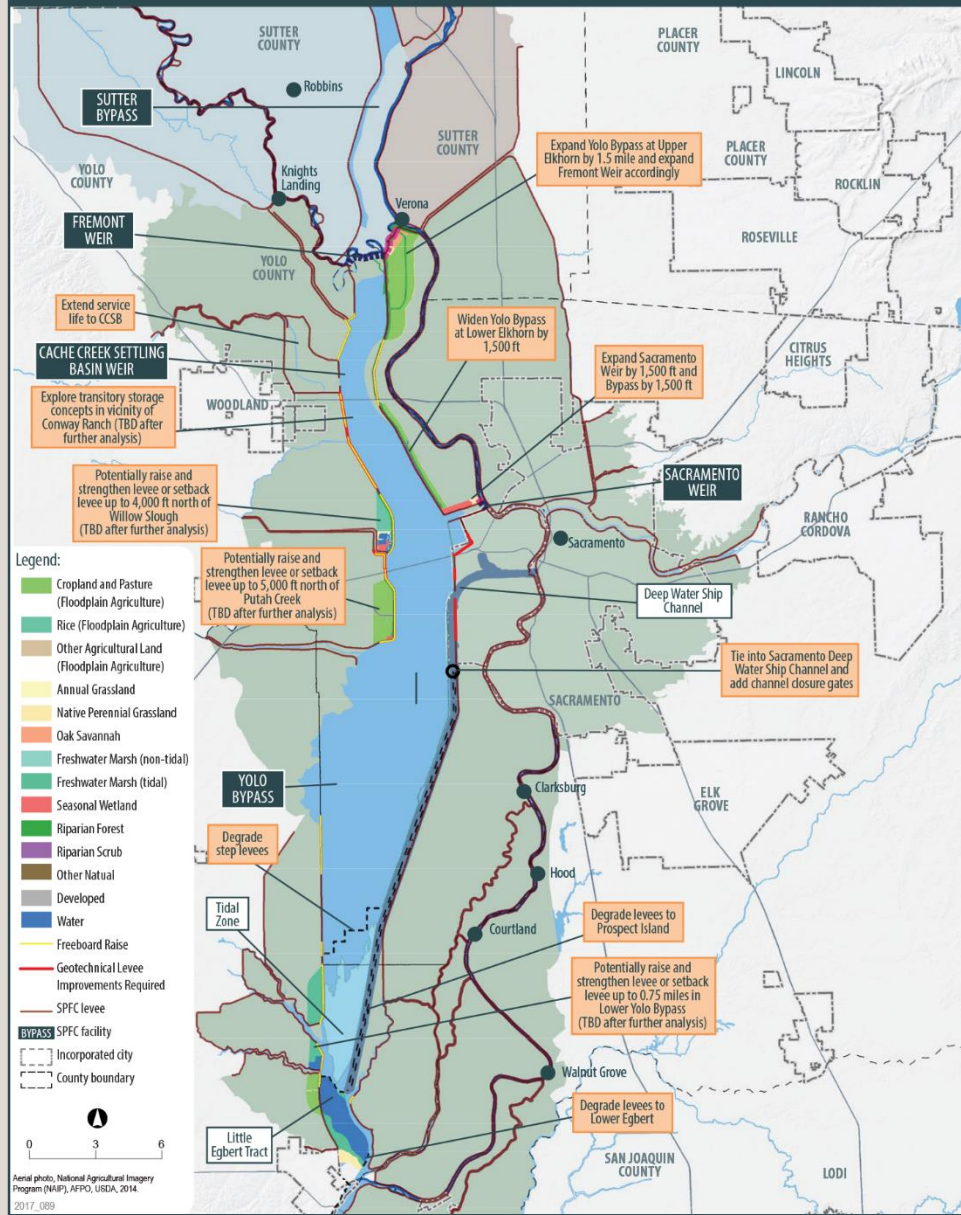
Investments Across Area of Interest

Capital Investment	Ongoing Investment
Systemwide Actions	
<ul style="list-style-type: none"> ■ Yolo Bypass multi-benefit improvements ■ Feather River—Sutter Bypass multi-benefit improvements ■ Paradise Cut multi-benefit improvements ■ Reservoir and floodplain storage 	<ul style="list-style-type: none"> ■ State operations, planning, and performance tracking ■ Emergency management ■ Reservoir operations ■ Routine maintenance
Urban Actions	
<ul style="list-style-type: none"> ■ Levee improvements ■ Other infrastructure and multi-benefit improvements 	<ul style="list-style-type: none"> ■ Risk awareness, floodproofing, and land use planning ■ Studies and analysis
Rural Actions	
<ul style="list-style-type: none"> ■ Levee repair and infrastructure improvements ■ Small-scale levee setbacks and floodplain storage ■ Land acquisitions and easements ■ Habitat restoration/reconnection 	<ul style="list-style-type: none"> ■ Risk awareness, floodproofing, and land use planning ■ Studies and analysis
Small Communities Actions	
<ul style="list-style-type: none"> ■ Levee repair and infrastructure improvements ■ Levee setbacks, land acquisitions, and habitat restoration 	<ul style="list-style-type: none"> ■ Risk awareness, floodproofing, and land use planning ■ Studies and analysis

Yolo Bypass Multi-Benefit Improvements

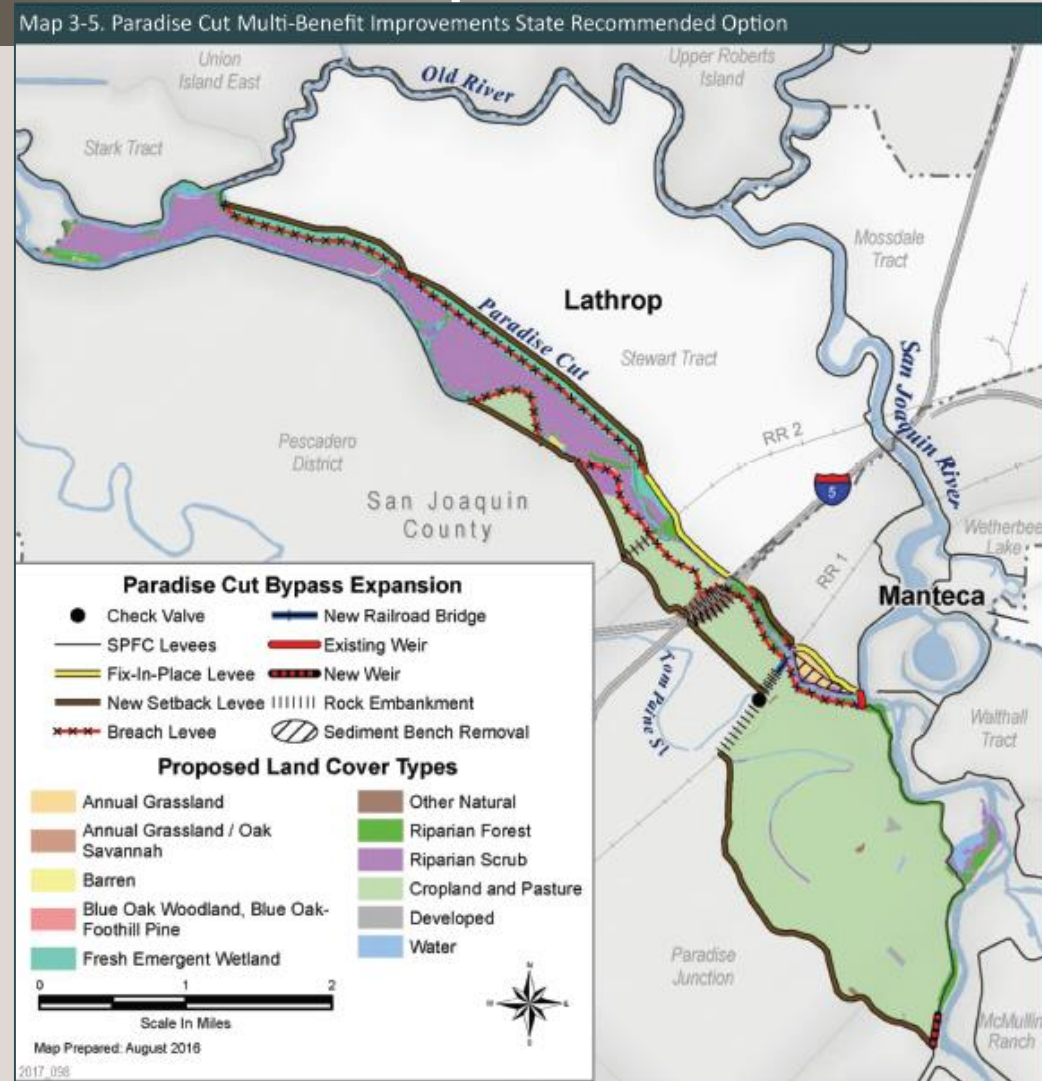
- Fremont Weir expansion
- Levee setbacks in the Elkhorn Basin
- Sacramento Weir expansion
- Measures to extend life of Cache Creek Settling Basin
- Lower Yolo Bypass expansion
- Additional ecosystem and multi-benefit improvements

Map 3-3. Yolo Bypass Multi-Benefit Improvements State Recommended Option



Paradise Cut Multi-Benefit Improvements

- New weir and levee setback
- Shaded riverine aquatic habitat restoration along decommissioned levee
- Riparian cover for native species
- Revetment to restore geomorphic processes along decommissioned levee
- Restoration of southern portion of current in-channel bar for floodplain rearing habitat



Chapter 4

Funding and Implementing the 2017 Refined SSIA Portfolio

- Summarizes refined SSIA costs and timing
- Monitoring and tracking
- Flood management policy recommendations



Total Capital and Ongoing Investments

Area of Interest	Sacramento		San Joaquin		Total	
	Low (\$M)	High (\$M)	Low (\$M)	High (\$M)	Low (\$M)	High (\$M)
Systemwide	\$5,920	\$7,240	\$1,910	\$2,340	\$7,830	\$9,580
Urban	\$3,560	\$4,350	\$1,200	\$1,460	\$4,760	\$5,810
Rural	\$1,860	\$2,280	\$1,130	\$1,370	\$2,990	\$3,650
Small Community	\$1,540	\$1,890	\$310	\$370	\$1,850	\$2,260
Grand Total:	\$12,880	\$15,760	\$4,550	\$5,540	\$17,430	\$21,300

Note: Totals reflect annual ongoing investments converted to present value (2016 dollars) and summed with present value capital investment costs.

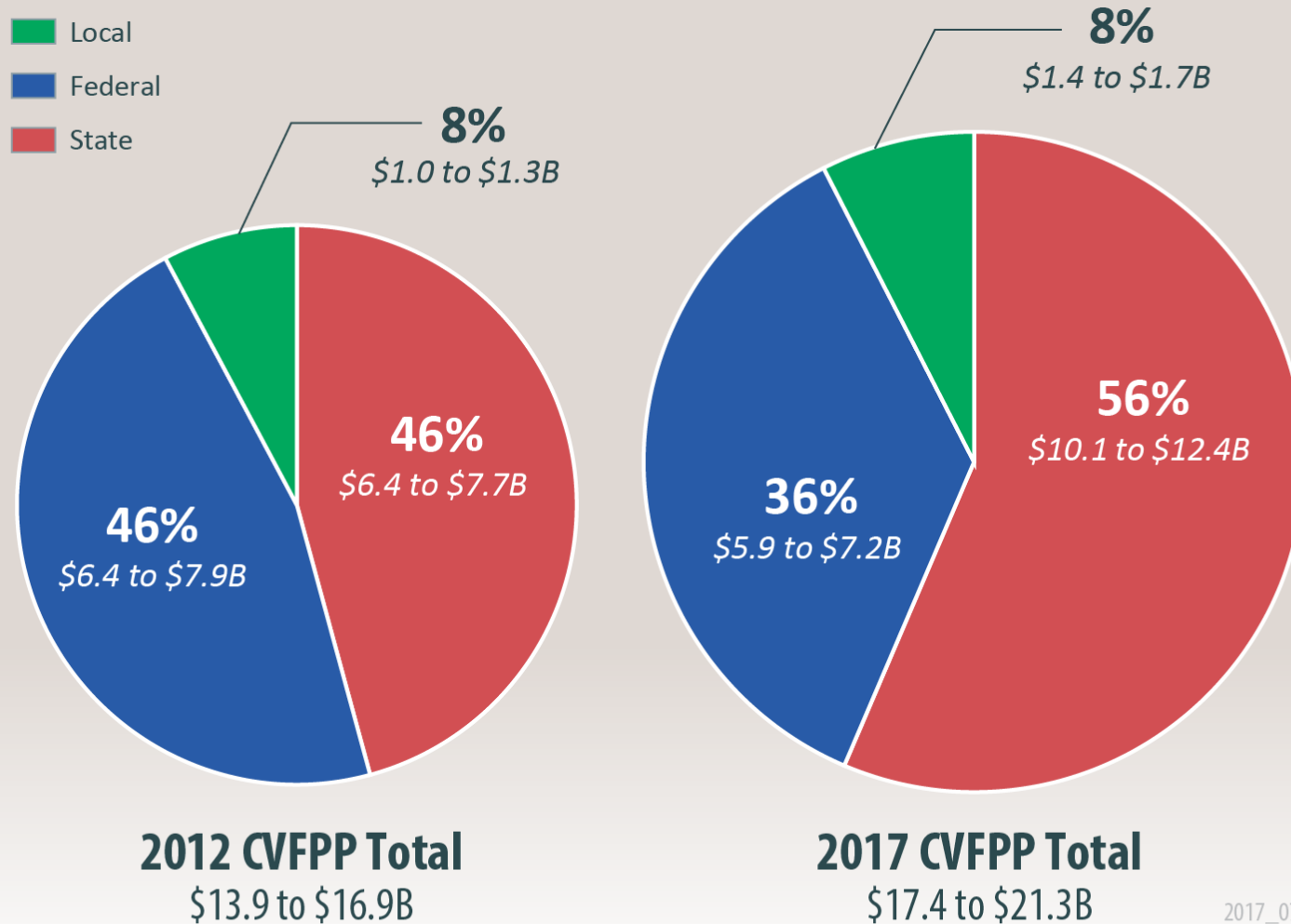
Potential State Funding Mechanisms

STATE	Additional General Fund	CVFPP funding plan recommends increasing General Fund appropriations.
	SAC/SJ Drainage District <small>New</small>	Reutilize function of the Sacramento and San Joaquin Drainage District.
	River Basin Assessment <small>New</small>	Assessment revenue would be returned to the watershed to be shared across the integrated water management activities.
	State Flood Insurance Program <small>New</small>	Augment/replace the National Flood Insurance Program (NFIP) program with a State-led program.
	General Obligation Bond	Issue new State general obligation bonds.

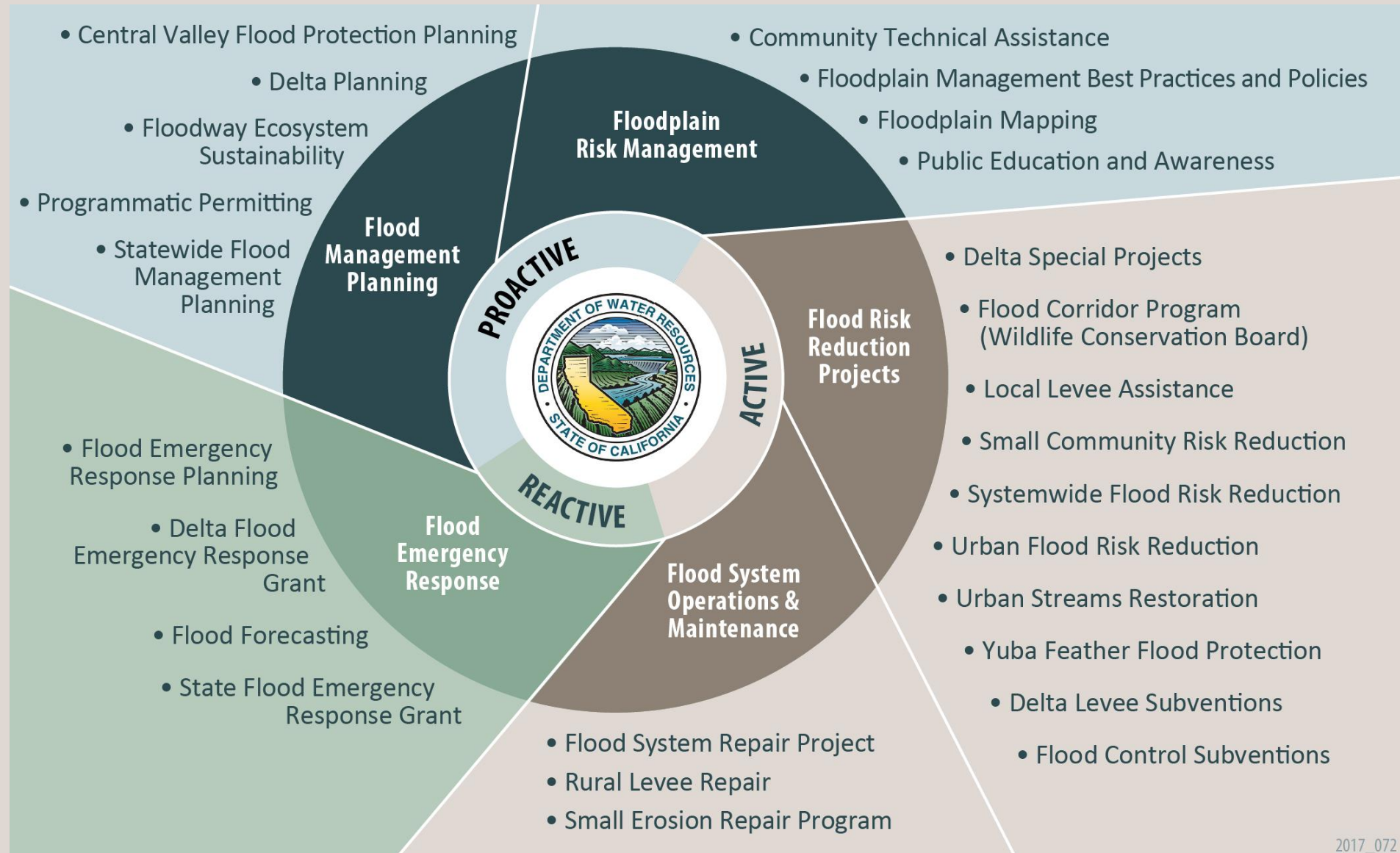
Potential Federal and Local Funding Mechanisms

FEDERAL	USACE	Water Resource Development Act (WRDA) authorizes Secretary of the Army to study and/or implement various projects and programs for improvements.
	FEMA	FEMA provides State and local governments with funding for emergency preparedness programs in the form of Non-Disaster Grants.
	Ecosystem Programs	Explore federal programs that provide grants for ecosystem purposes, such as Farm Bill conservation programs offered through Natural Resources Conservation Service (NRCS).
LOCAL	Benefit Assessments and Special Taxes	Increases to benefit assessments and special taxes.

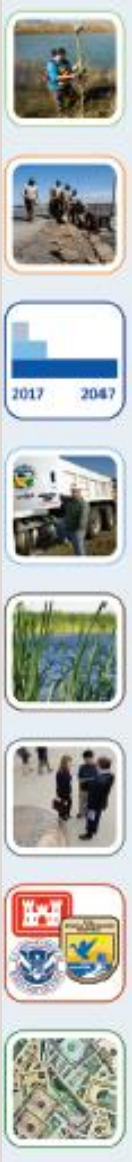
Sharing Costs Among Partners



Implementation Through Program Delivery



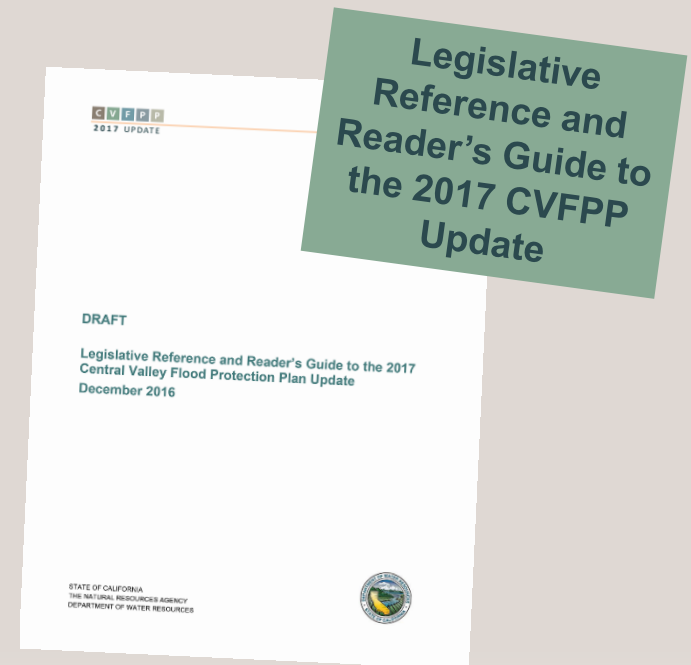
The Way Forward



- Recommendations for flood management policy issues; work plans to address issues
- Each policy issue follows this structure:
 - **Flood management policy issue name**
 - **Issue summary:** brief definition statement of what the issue encompasses
 - **Near-term milestone:** brief statement of progress that may be achieved by the 2022 CVFPP Update if sufficient resources are available
 - **Recommended actions:** list of near- and longer-term recommendations with supporting details and recommended participating agencies. Where applicable, participating agencies denoted

Legislative Reference and Reader's Guide

- Explains how the 2017 CVFPP Update meets Central Valley Flood Protection Act of 2008 (Act) requirements
- Orients readers with 2017 CVFPP Update attachments and supporting documents used to guide/inform the Update
- Provides descriptions of supporting documents



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